15(I)

TOP SECRET

OSDIC/CMF/Y 40

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FIRST DETAILED INTERROGATION ON REPORT ON

BARTHEL Thomas

Name	:	BARTHEL Thomas
Rank	:	Cpl
Unit	:	7 INTERCEPT EVALUATION SEC.
Function	:	Cryptanalyst
F.P. No.	:	05018
Captured	:	Arrested by CIC at BRESCIA on 13 Jul 45
Secret No	:	M 45/780
Interrogated	:	CSDIC, CMF, 21 - 24 Aug 45

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C.S.D.I.C.,
C.M.F.
31 Aug 45

for (W.S. VALENTINE),
Lt-Col,
Comd, CSDIC, CMF.

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1. PREAMBLE

PW is a fairly bright, self-confident young man of 22 who claims to be anti-Nazi and that he decided to leave the German Army sometime last autumn. When the war began he was about to study geography at BERLIN University. He speaks English, Italian, Norwegian and Swedish. He gave information willingly and appears to be aware of the interest the Allies show in the matters of which he has knowledge. Unfortunately, he has neither the good memory for detail nor the technical skill of either DOST or COELER, so that most subjects on which he has information are already known in greater detail than he could provide. His information is however reproduced in toto, because it provides a check on the two PW mentioned above, and also completes certain gaps in the picture.

Reliability : Fair.

2. HISTORY AND MOVEMENTS

25 Aug 41	Called up to 6 Coy, 3 Sigs Depot Bn, POTSDAM.
30 Aug 41	Transferred to 3 (English-speaking) Coy, Sigs Interpreters Depot Bn, MEISSEN.
20 Oct 41	Posted to OKH IN 7/VI for a course on cryptography, lasting three months.
beg Jan 42	Posted to ENGLAND Referat in OKH IN 7/VI.
mid Apr 42	Transferred to 9 Fixed Intercept Sta (FNAST 9), then forming at FRANKFURT a/Main.
beg Jul 42	With unit to NORWAY.
Aug 44	With unit to SANDRIGO (Province of VICENZA) where the unit was gradually disbanded. PW posted to 7 Intercept Evaluation Sec (NAAST 7) at BREGANZE, nr VICENZA.
10 Mar 45	Went over to Partisans together with Cpl DANIEL, Henry.
25 Apr 45	With Brigata MONTE SUELLO ("Justizia e Liberta" formation).
Jun 45	Writing report for "PATRIOT BRANCH" at BRESCIA explaining his conduct and trying to get official Partisan status.
beg Jul 45	While waiting for results of above, went to BRESCIA and found a job with AMG in the Finance Dept.
13 Jul 45	Arrested by CIC, interrogated, and sent to VERONA.

3. WORK AT OKH IN 7/VI, ENGLAND REFERAT, (Jan - Apr 42)

A. The WOC-ME

A 4-figure code used in conjunction with continuous recipher. Traffic intercepted was originated in ME. The code was broken by means of depth obtained from "periodicity" (PHASENGLEICHHEIT) of the recipher. The weakness of the system was the way in which the spelling was indicated, i.e., speller indicators enabled spelt portions of a message to be treated as a simple substitution cipher ("Buchstabierstellen konnten praktisch als einfacher Caesar geloest werden").

B. The IDC

PW states that all he knows about this code is that it was used in Diplomatic Traffic. He states he has no knowledge of how it was read, broken or deciphered, except that he does know the basic book had been captured.

C. Research

While in the ENGLAND Referat PW worked for a time in a small group under Dr. SCHULZ trying to break any new code or cipher systems used in ME, figure traffic only. However NO results were obtained (I.O.'s Note:- this traffic may be the unrecognised WOC-ME traffic of which COELER knew so little).

4. WORK IN 9 FIXED INTERCEPT STA (FNAST 9) - Jul 42 - Aug 44

PW was employed on British, USA and Swedish codes and ciphers while with this unit.

A. BRITISH SYSTEMS

I. The EC 5

In use in 42 - 43. It was a simple code-table containing clear text in alphabetical order inside columns. Code groups were reciphered by means of hatted alphabets which were provided on fixed cursors. Code groups were letter-bigrams, and traffic was sent in 5-letter groups. Tactically valuable material was intercepted in AFRICA. In UK traffic was mostly practice material. Canadian units stationed in the South of ENGLAND had their own EC tables. The use of this field code was stopped at beginning 44.

II. The EC 12

Traffic in this field code appeared in NORTH AFRICA in 42 - 43. It was a development of the EC 5. A code group of 2 letters was reciphered to a group of 4-figures which was then signalled. Reciphering took place following a co-ordinates system, which was afterwards hatted before signalling. It was actually worked on and broken in BERLIN.

III. The SLIDEX

This was worked on since May 44. It was developed from the early EC 5. It was a far better system, especially as it enabled three variants for clear text (DREIFACHE BUCHSTABENBELEGUNG) and "double-variants" for clear SWITCH-ON and SWITCH-OFF. At the same time, the variable cursor system often resulted in settings which allowed the "pairing up" of messages set on the same lines, or on the same columns. Parts of the cursor-settings could often be reconstructed, even before the text was broken.

(a) The EC 30/3

The SLIDEX referred to by the Germans as the EC 30/3 was reconstructed by 9 Fixed Intercept Sta in May 44. Traffic intercepted had been originated by ALOs links (FLIVONETZE) in UK. Control of these links was always at Corps level and reading of traffic gave an insight into Corps O of B, etc. PW states that traffic was British and not American and that as far as he could make out the ALOs were Army and RAF officers. The Germans were very surprised to see that this field-code, without any alteration whatsoever, was used by the ALOs links on D-day and a good few weeks after 6 Jun 44, allowing the enemy to discover at once the Corps O of B, with details down to Bdes. This kind of work was handed over to 5 Intercept HQ at ST GERMAIN at end Jun 44. This unit succeeded in reconstructing several more SLIDEX tables, to which were added captured specimens during summer and autumn.

(b) The EC 30/20 (S and T)

The SLIDEX called EC 30/20 (S & T) was reconstructed by 7 Intercept HQ. Traffic was originated by supply units of 8 Army. Tactical messages had been read till end Sep 44, when they stopped - according to PW - and 4-figure traffic was signalled, which was suspected to be reciphered code, and was not broken.

IV. The LINEX

This system was in use since Feb 45. It was worked on, but not broken. It was suspected to be a combined substitution and transposition system. Traffic was sent in 4-letter groups, and indicators (KENNGRUPPEN) were also of 4 letters, and the number of letters in messages was signalled at the end.

V. The CODEX

This had been in use in ITALY before 1 Sep 44. PW referred to it as a "DECKNAMECODE". This code was read. A captured specimen had been in possession of the Germans since the days of the LEROS invasion.

B. USA SYSTEMS

I The DFCs (Divisional Field Codes).

(a) DFC 15

In use in autumn 42, broken in Jan 43. Traffic was intercepted on a frequency of 4080 Kcs from US Army links in ICELAND (stas at REYKJAVIK, AKUREYRI and BUDAREYRI). Stas used fixed call-signs till autumn 43, and thereafter daily call-signs. This field code was current for one month only. It was a 4-letter code, non-alphabetical, with variants and use of "duds" (BLENDERN"). It was broken by assuming clear routine messages were the basis of the encoded text, such as Daily Shipping Report, Weather Forecast etc.

(b) DFC 16

This was current for one month, probably in Nov 42. It was similar to the DFC 15 above.

(c) DFC 17

This was current from Dec 42 to Feb 43. About the latter date one or two copies of the table were captured. Very good material was intercepted from ICELAND, also from 6 (?) USAAF links in Central AMERICA, CARIBBEAN SEA etc. Traffic was broken and read nearly up to 100%.

(d) DFC 21

This succeeded the DFC 17. Results were the same.

(e) DFC 25

Current only in CARIBBEAN SEA area, and read in part.

(f) DFC 28

This succeeded the DFC 21 in summer 43. It was used by the ICELAND links and the 28 (or 29) US Div in the South of ENGLAND. The code was read. Now and again it was reciphered by means of alphabet substitution tables ("eine Art von Buchstabentauschtafel") changing daily. This method was broken because the systematic construction of the field code was known.

(g) DFC 29

A copy of this table was captured in autumn 43. It was never used, PW did not know why.

II. The AC 1

This was a US Army Adrin code, of no strategic value. Traffic in this code was passed by fixed US WT stas and bases abroad. The code was of the 5-letter type, with about 60,000 groups, each page containing 90 groups. There were code-groups for complete phrases, but these were not used very often. PW thought that operators found it easier to encode text by taking clear single words rather than be bothered to look down the clear phrases column to find the required sentence. The code had been "captured" before 39 and all German crypto secs in the field were equipped with photostat copies. In NORWAY, 9 Fixed Intercept Sta took and read this traffic from summer 42 to autumn 43.

III. The "TELVA"

This code succeeded the AC 1 in autumn 43. It was a simpler edition of the AC 1, with fewer variants provided, but built up on the same lines and of the same size. 9 Fixed Intercept Sta broke and reconstructed it to a large extent, with the help of the available AC 1.

C. SWEDISH SYSTEMS. (All Army systems)

I. The SRA 1, SRA 5

These were described by PW as a "Raster" which could be revolved and turned ("ein Dreh-und Wende-Raster"). The table consisted of 20 columns, grouped in blocks of 5 columns each, and 15 lines, the total of 300 spaces being divided in one quarter blank and three quarters blotted spaces. This table was used as a stencil on or through which 75 clear letters would be written. Text was written across horizontally, and read off downwards along columns block by block in accordance with a certain key, say 1, 4, 2, 3 where each digit stood for 5 small columns which were read off together. The complete stencil was then revolved by 180° for writing out of a further 75 clear letters, after which-if the text was long-the stencil was turned on the other side, the right hand edge of the original side becoming the left hand edge of the turned-over side and vice-versa, with a further possibility of revolving this side through 180° also. Thus the stencil could be used four times, i.e. the text could be 300 letters long without re-writing over the same stencil area. PW states however that numerous cases of compromises occured and that the stencil was in actual fact a very simple system, used probably for training purposes for operators who were to use the HGA-Raster below. Traffic was all read with comperative ease. It was first broken in spring or summer 43.

II. The HGA-Raster

This was a much harder system, providing no compromise cases at all. After 9 Fixed Intercept Sta had failed to break it, material was sent to BERLIN and handed over to a German Foreign Office cryptographer who had knowledge of these Swedish Raster systems. This was due to the fact that the Swedish Foreign Office used Raster ciphers for their diplomatic comms. However, as far as PW knew, no results were obtained at BERLIN either.

III. The SCs (SCHWEDEN CODE)

(a) SC2

Read in May 43. It was a simple field code in table form on the lines of the EC 5, but without disguising of cursor indicators or cursor-letters. Traffic indicators (KENNGRUPPEN) were known to the Germans as giving the type of table which was being used. Thus STCST always preceded traffic in the same table. This traffic was read, as well as tables with indicators STBST and STDST.

(b) SC3

Read in Apr 43. This was a simple, partly alphabetical, 3-letter field code. No reciphering was used. The indicator (KENNGRUPPE) used was SSCSS. Tables also existed with indicators SSASS, SSBSS and SSDSS.

(c) SC4

Read in Jun 43. It was a 3-letter alphabetical code ranging from aaa to hhh, which PW described as voluminous ("umfangreich"), with 512 groups = 8^3. No recipher was used.

5. ORGANISATION OF 9 FIXED INTERCEPT STATION (FESTE NACHRICHTEN AUFKLÄRUNGSSTELLE 9)

Cf : OSDIC/CMF/Y 30 para 3 E.II b)

A. History

The unit, cover name ASTRID, was formed between May and Jun 42 at FRANKFURT a/Main. It left for NORWAY in Jul 42 and was first stationed at TRONDHJEM later at BRIGEN, and in spring 44 at SKI near OSLO. In Aug 44 it came to ITALY and was stationed at SANDRIGO near VICENZA. PW states that between summer and winter 44 the unit gradually wound itself up and personnel were taken away from it, so that by Xmas there was nothing left. While in NORWAY the unit came u/c of 5 Intercept HQ, ST GERMAIN, after arrival in ITALY it was u/c of 7 Intercept HQ, BREGANZE.

B. Organisation

The Sta was organised on the lines of a Coy, with an HQ, three pls, the Evaluation Sec with its sub-secs, and a supply col. HQ Coy was largely the OC's Office and the Orderly Room. The Pls were :

Intercept Pl (HORCHZUG) about 80-120 men strong, equipped with about 30 sets,
DF Pl (PEILZUG) which was not used in the field,
Sigs Pl (NACHRICHTENVERBINDUNGSZUG) about 20 men strong and equipped with WT sta, TP and LT exchange.

The Evaluation Sec (AUSWERTUNG) was subdivided into:
Contents Evaluation Sub-sec (INHALTS AW)
Traffic Evaluation Sub-sec (VERKEHRS AW)
Final Evaluation Sub-sec (END AW)
Cryptographic Sub-sec (ENTZIFFERUNG).
Total personnel amounted to about 30 men.

C. Tasks

PW states that the unit's tasks were to intercept traffic originated by the British Army in Northern ENGLAND, SCOTLAND and the FAROES, and from summer 44 all Invasion links; further all US Army links in ICELAND, all US fixed WT stas in the ATLANTIC area and the CARIBBEAN; also ME and INDIA traffic, and occasionally ATC traffic. In addition to this, the unit intercepted Swedish Army traffic and employed a (?) Sec of LT intercept specialists for listening in to telephone conversations across the Swedish border. Swedish Army WT traffic and LT interception was done by a sub-unit of 9 Fixed Intercept Sta, called "Aussenstelle HALDEN" stationed at HALDEN and attached for admin purposes to the HALDEN Police Bn. The unit used the Police Bn F.P.No. The WT side of the Aussenstelle had 8 to 10 sets at its disposal, whereas several "listening dets" (LAUSCHTRUPPS) were employed at or near the frontier crossings at KORNSJOE and East of TRONDHJEM. PW knew no further details on this side of the work and referred to 2/Lt THIELCKE as knowing technical details.

D. Equipment

PW knew few details except that the unit equipment allowed interception of hand-key morse, a semi-automatic device called "BUG-TASTE", automatic transmitter traffic and WT TP (FUNKFERNSCHREIBVERKEHR). He mentioned WT Sjt (Funkmeister) RUDOLPH as expert on WT TP intercept.

6. MISCELLANEOUS

A. Co-operation with Japanese Crypto Service

This existed officially, but in actual fact amounted to nothing. PW heard of only one instance in which some exchange of information took place. It was done in connection with an American field cipher machine captured by the Japanese.

B. Inter-Services Liaison in German Crypto Services

PW knew - without being in possession of further details - of the existence of cryptographic services with the German OKW, OKH, OKL, OKM, the Foreign Office, and - he thought - with the SD as well. The latter certainly tried to take over from the OKH all the cryptographers dealing with Agents traffic (AGENTENFUNK) as it claimed that this was an SD matter. This is supposed to have happened sometime in 44, but PW did not know whether it happened when the Reichssicherheitshauptamt took over the Abwehr, or not. In the end, due to the opposition put up by OKH IN 7/VI, a compromise was reached and most good cryptographers from the AGENTEN Referat were transferred to OKW-CHI. Apart from trying to take people or work from each other, the various crypto services rarely co-operated with one another. PW states that OKH and OKL did co-operate to some extent, but nothing wad done in the way of working with OKM, least of all with OKW. The latter kept everything to itself and PW know of at least one instance where OKW had been in possession of some information and left OKH to find out things for itself.

C. "HONGKONG LIEDKE" Another Version of a Treason Story

Cf : CSDIC/CMF/Y 31 para 5.b)

This was the name under which people referred to the person (supposed to have been of British nationality) who had been brought to BERLIN in winter 41/42 to give some information of value to IN 7/VI, or perhaps the name of the person in OKH dealing with the matter (there was an Oberinspektor LIEDKE i/c of the ENGLAND Referat at the time). The person concerned - of whom it is not known whether he was a PW or not - gave some information regarding British methods of disguising indicator groups (KENNGRUPPEN) in traffic, also a description of a method of recognising the type of code in which traffic was sent according to the number of symbols in marconigram groups.

PW states that he is certain no practical use could be made of the information given, but does not know whether this was because the person concerned pulled the leg of the Germans or whether his information did not fit the material to which it was applied. He stated that Dr. SCHULZ and Oberinspektor ZILLMANN (see para 7 a and CSDIC/CMF/Y 30 para 4 respectively) could give more information on the subject.

7. PERSONALITIES (Cf : CSDIC/CMF/Y 30 para 4)

(a) OKH IN 7/VI

Sonderfuehrer Oberbaurat Dr SCHULZ	Head (Leiter) of ENGLAND and AMERICA Referat since autumn 44. Mathematician.
Dr STEINBERG	Described by DOST and COELER as Sonderfuehrer STEINBERG. Since 43 head of the AMERICA and SWEDEN Referat till autumn 44, when the former were amalgamated with the ENGLAND Referat under SCHULZ above. Expert on USA and Swedish machine ciphers. In autumn 44 went to OKW-CHI.

Dr PIETSCH	Worked with Dr STEINBERG on machine ciphers.
Oberregierungsrat BAILOVIC	Specialist CA on Slav (SE EUROPE) traffic, mainly TITO material. Ex-employee of the Austrian Federal State till 1938.
LUZIUS or LUCIUS Dr	CA and expert on machine cipher.
Dr (? Lt) FAUCK	In AGENTEN Referat. Specialist in agents codes and ciphers. In 44 went over to OKW-CHI.
CSM (Wm) STADE	Worked in ENGLAND Referat in 42. Later on moved to TURKEY (?) Sec. Has lived in TURKEY for a long time and speaks Turkish fluently.
Sonderfuehrer (G) FEUCHT(L)INGER	In ENGLAND Referat in 42, later in RUSSIA. No further particulars known.
Sonderfuehrer KOELER	CA in FRANKREICH Referat. Specialist in French codes and ciphers, incl machine ciphers. Not related to COELER, subject of reports Y 30 and 31.

(b) 9 Fixed Intercept Station

Lieut van der LEEDEN, James	OC Coy, 9 Fixed Intercept Sta till Aug 44. Later either at 5 Intercept HQ, ST GERMAIN or at EUSKIRCHEN FESTE HORCHSTELLE, nr COLOGNE. A German of Dutch origin.
Lieut MOTULLO	Succeeded van der LEEDEN above.
2/Lt BUEKER	OC Intercept Pl till autumn 43.
Insp REINECKE	Head of the Evaluation Sec (CHEF DER AUSWERTUNG). A specialist on British WT traffic, has served at the FESTE HORCHSTELLE at MUENSTER.
Insp PFITZER, Ernst	Head of Cryptographic Sub-sec (CHEF der ENTZIFFERUNG). Has served at the FESTE HORCHSTELLE STUTTGART. Is a specialist on French codes and ciphers.
2/Lt THIELCKE	OC Aussenstelle HALDEN and head of "SWEDEN Recce" (CHEF DER AUSSENSTELLE HALDEN UND LEITER DER SCHWEDENAUFKLAERUNG). Should be able to give information on Swedish LT intercept and codes.
WT Sjt (Funkmeister) RUDOLPH	Expert on WT TP interception. Believed to live in FULDA.
Cpl CHRIST Herbert	Ex 9 Fixed Intercept Sta. Specialist on British codes and ciphers.
Cpl HANSEN Helmut	Ex 9 Fixed Intercept Sta. Specialist in Swedish codes and ciphers.

Cpl CHRISTMANN	In 9 Fixed Intercept Sta. No further details known.
Cpl LACKNER	CA.
Cpl HOFFENREICH	CA. Swedish Specialist.
L/Cpl SCHULEMANN	CA.
L/Cpl JANSEN	CA.
L/Cpl WALBRUECK	CA.
L/Cpl SCHOTT	CA.
L/Cpl SCHROEDER	CA.
L/Cpl MODERY	CA.
L/Cpl HELD	CA.

(c) 7 Intercept HQ

2/Lt EGGERS	In 44 was Evaluation Officer (AUSWERTE-OFFIZIER) in 7 Intercept HQ, in Jan 45 was sent to 1 Fixed Intercept Sta (ERLA). In 42 was in ENGLAND Referat of IN 7/VI.
CSM (Wm) HIRTH	French specialist at 7 Intercept Evaluation Sec.
Cpl ACKERMANN, Wolf	In 7 Intercept Evaluation Sec. Ex 9 Fixed Intercept Sta. Is a mathematician.
Cpl DANIEL, Henry	In winter 44-45 joined 7 Intercept Evaluation Sec. Formerly in 9 Fixed Intercept Sta. It a specialist on USA codes and ciphers. Deserted to Partisans with PW in Mar 45. After the collapse got job as interpreter with a unit in 10 US Mtn Div, later used as interpreter with "K" Coy, 1 Bn, 351 Inf Regt, 88 US Div. Should be in the BRESCIA area now. Has written a report on his activities for a Major LANZ, of AMG, MILAN, in which he must have given his address.
? WENNIGER, Horibert	Was with DANIEL and PW when they deserted to Partisans. No further details known.

(d) Miscellaneous

Cpl FLICK	CA and mathematician in 5 Intercept HQ in 43. Invented special apparatus for work on an USA cipher machine.

A.G.B.